

FACT SHEET FOR NPDES PERMIT WA0037141
FACILITY NAME LAKE MAYFIELD VILLAGE WASTEWATER
FACILITIES

TABLE OF CONTENTS

INTRODUCTION	1
BACKGROUND INFORMATION	2
DESCRIPTION OF THE FACILITY	2
History	2
Collection System Status	2
Treatment Processes	2
Discharge Outfall	2
Residual Solids	3
PERMIT STATUS	3
SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT	3
WASTEWATER CHARACTERIZATION	3
SEPA COMPLIANCE	4
PROPOSED PERMIT LIMITATIONS	4
DESIGN CRITERIA	4
TECHNOLOGY-BASED EFFLUENT LIMITATIONS	4
SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS	6
Numerical Criteria for the Protection of Aquatic Life	6
Numerical Criteria for the Protection of Human Health	6
Narrative Criteria	6
Antidegradation	6
Critical Conditions	7
Mixing Zones	7
Description of the Receiving Water	7
Surface Water Quality Criteria	7
Consideration of Surface Water Quality-Based Limits for Numeric Criteria	8
Whole Effluent Toxicity	11
Human Health	11
MONITORING requirements	12
LAB ACCREDITATION	12
OTHER PERMIT CONDITIONS	13
REPORTING AND RECORDKEEPING	13
PREVENTION OF FACILITY OVERLOADING	13
OPERATION AND MAINTENANCE (O&M)	13
RESIDUAL SOLIDS HANDLING	13
PRETREATMENT	13
OUTFALL EVALUATION	13
GENERAL CONDITIONS	13
PERMIT ISSUANCE PROCEDURES	13
PERMIT MODIFICATIONS	13
RECOMMENDATION FOR PERMIT ISSUANCE	14
REFERENCES FOR TEXT AND APPENDICES	15
APPENDIX A--PUBLIC INVOLVEMENT INFORMATION	16

FACT SHEET FOR NPDES PERMIT WA0037141

FACILITY NAME LAKE MAYFIELD VILLAGE

APPENDIX B--GLOSSARY	17
APPENDIX C--TECHNICAL CALCULATIONS	22
APPENDIX D--RESPONSE TO COMMENTS	23

INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System (NPDES) of permits, which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the state of Washington on the basis of Chapter 90.48 Revised Code of Washington (RCW) which defines the Department of Ecology's (Department) authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the state include procedures for issuing permits [Chapter 173-220 Washington Administrative Code (WAC)], technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least 30 days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

GENERAL INFORMATION	
Applicant	Lewis County Water and Sewer District #6
Facility Name and Address	Lake Mayfield Village wastewater Facilities 139 Lakeside Drive West Mossyrock, WA 98564
Type of Treatment	Sequencing Batch Reactor (SBR)
Discharge Location	Cowlitz River Mile 52 near the Lake Mayfield Powerhouse Latitude: 46° 30' 08" N Longitude: 122° 35' 33" W.
Water Body ID Number	WA-26-1090

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

Lewis County just constructed a wastewater collection, treatment, and disposal system to serve the Lake Mayfield Village and Tanglewood subdivisions, located near State Route 12 on Mayfield Lake. The village is located approximately $\frac{3}{4}$ of a mile above Mayfield Dam on the Cowlitz River. The Lake Mayfield Village area was under a development moratorium due to actions taken by the Lewis County Board of Health to impose moratoriums on the construction of new septic tanks and connections to the water system.

Lake Mayfield Village was originally platted in 1965. A temporary moratorium on the authorization of installation of on-site septic systems was first instituted by the Lewis County Board of Health in 1979. A permanent moratorium was put into place in 1982 due to severely limiting site conditions and sewage contamination found in each section of the subdivision. (A moratorium on connections to the water system that serves the area was instituted in 1984 due to poor water quality.)

A number of septic systems have failed over the years, and some systems are presently in need of repair. On-site septic systems are very difficult to place in the Lake Mayfield Village area. Lot sizes are small and constrained by steep slopes. Soils are shallow and drain poorly. In 1996, Lewis County evaluated eight septic systems and found that five were not meeting County standards.

COLLECTION SYSTEM STATUS

A septic tank effluent pumping (STEP) collection system was constructed in 2001 to serve the Lake Mayfield community of 225 [90 Equivalent Residence Units (ERUs)] existing and 725 (290 ERUs) future population. The STEP tank installation will be ongoing as the site is developed and sewerred.

TREATMENT PROCESSES

The treatment process, constructed in 2002 consists of an influent flow meter, sequencing batch reactors, UV disinfection, effluent flow measurement, outfall and diffuser into the tailwater of Lake Mayfield Dam. The wastewater plant will be placed in operation in January 2002. The sludge will be aerobically digested.

The plant is Classified as a Group II and will require one full time operator in responsible charge certified at the Group II level. A backup operator will also be required on occasion to assist with maintenance and fill in during periods of absence.

DISCHARGE OUTFALL

The outfall discharges below the plunge pool barrier dam on the downstream side of Lake Mayfield Dam 40 feet from shore and 5 feet below the surface at minimum water level. The outfall terminates at a three (3) port diffuser. The diffuser pipe is in a vertical orientation. The three 6-inch tideflex diffuser ports are teed off of the diffuser pipe with a horizontal orientation, pointing downstream. The three (3) tideflex diffusers are in vertical alignment, one at the bottom,

FACT SHEET FOR NPDES PERMIT WA0037141
FACILITY NAME LAKE MAYFIELD VILLAGE

one in the middle, and one at the top. The diffuser ports are spaced 1 foot 4 inches apart with the middle diffuser at elevation 234 feet. The maximum water surface elevation at that location is approximately 248 feet. The minimum water surface elevation is 239 feet.

Secondary treated and disinfected effluent is discharged from the facility via outfall 001 into the Cowlitz River. A bypass outfall 002 is just upstream of the barrier dam 10 feet offshore and 5 feet below the water surface. The bypass outfall will be used for emergency only if outfall 001 becomes unavailable for discharge. Estimated use frequency and duration for outfall 002 is on average less than once/year and for one-two days, respectively.

RESIDUAL SOLIDS

The STEP tanks in the collection system remove solids during the treatment of the wastewater in each individual septic tank (primary sludge, grit and screenings, rags, scum, and other debris). Secondary sludge is removed at the SBR basins along with a small amount of rags, scum, and other debris removed as part of the routine maintenance of the equipment. Grit, rags, scum and screenings are drained and disposed of as solid waste at the local landfill. Solids removed from the SBRs are land applied under a permit from the Lewis County Health District.

PERMIT STATUS

This is a new facility with no previous permit. The community was previously served by septic systems

An application for permit renewal was submitted to the Department on November 17, 2000, and accepted by the Department on February 14, 2001.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

This is a new plant. No previous permit existed except County approvals for septic systems.

During the history of the permitted septic systems, there was a high failure rate due to poor soils. That triggered the need for the new sewer system project

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was estimated and reported in the NPDES application. The effluent is characterized as follows:

Table 1: Wastewater Characterization

Parameter	Concentration/Value (Estimated)
pH	6-9
Fow Rate	0.24 mgd Daily Max. 0.068 mgd Average Daily
Temperature (winter)	14°C Daily Max. 11°C Average Daily
Temperature (summer)	20°C Daily Max. 18°C Average Daily
BOD ₅	45 mg/L Daily Max. 20 mg/L Average Daily
Total Suspended Solids (TSS)	45 mg/L Daily Max. 20 mg/L Average Daily
Fecal Coliform	400 Colonies/100 ml Daily Max.

	200 Colonies/100 ml Average Daily
--	-----------------------------------

SEPA COMPLIANCE

SEPA has been fully complied with.

PROPOSED PERMIT LIMITATIONS

Federal and state regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations for municipal discharges are set by regulation (40 CFR 133, and Chapters 173-220 and 173-221 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC), or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992.) The most stringent of these types of limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. The Department does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

DESIGN CRITERIA

In accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria.

The design criteria for this treatment facility are taken from the Lake Mayfield Village Wastewater Facilities engineering report prepared by Parametrix, Inc. and are as follows:

Table 2: Design Standards for Lake Mayfield Village WWTP.

Parameter	Design Quantity
Monthly average flow (max. month)	0.080 MGD
Peak Daily Flow	0.178 MGD
Peak Instantaneous Flow	0.267 MGD
BOD ₅ influent loading	127 lbs/day
TSS influent loading	40 lbs/day

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Municipal wastewater treatment plants are a category of discharger for which technology-based effluent limits have been promulgated by federal and state regulations. These effluent limitations are given in the Code of Federal Regulations (CFR) 40 CFR Part 133 (federal) and in Chapter 173-221 WAC (state).

FACT SHEET FOR NPDES PERMIT WA0037141
FACILITY NAME LAKE MAYFIELD VILLAGE

These regulations are performance standards that constitute all known available and reasonable methods of prevention, control, and treatment for municipal wastewater.

The following technology-based limits for pH, fecal coliform, BOD₅, and TSS are taken from Chapter 173-221 WAC are:

Table 3: Technology-based Limits.

Parameter	Limit
pH:	shall be within the range of 6 to 9 standard units.
Fecal Coliform Bacteria	Monthly Geometric Mean = 200 organisms/100 mL Weekly Geometric Mean = 400 organisms/100 mL
BOD ₅ (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L
TSS (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L

The following technology-based mass limits are based on WAC 173-220-130(3)(b) and 173-221-030(11)(b).

*Monthly effluent mass loadings (lbs/day) were calculated as the maximum monthly design flow (0.08 MGD) x Concentration limit (30 mg/L) x 8.34 (lb/gal.) = mass limit 20 lbs/day.

*Note: Since the influent is more dilute than “normal” because the collection system uses STEP tanks, the mass loading limit will be based on 30 mg/L of BOD₅ and TSS at Maximum Month design flow.

Federal and state require POTW’s to remove 85 percent of BOD and TSS from the influent wastewater. This removal requirement is difficult to assess in a STEP system, which utilizes septic tanks as part of the treatment system. Septic tanks remove settleable solids and provide a limited amount of digestion of organic matter of domestic wastewater. For POTWs that receive domestic sewage after treatment in septic tanks, the BOD₅ and solids removal in the septic tanks is considered an integral part of the treatment process for BOD₅ removal. Since it is impractical to measure the actual BOD₅ and solids entering the septic tanks, compliance with the 85 percent removal requirement will be assumed if the effluent concentration for BOD₅ and TSS meets 30 mg/L, and there is no excessive inflow and infiltration (I/I). Excessive I/I is defined by U.S. EPA criteria:

Infiltration is excessive when the highest 7-14 day average daily dry weather flow is greater than 120 gallons per capita per day.

Inflow is excessive when the highest recorded daily flow during a storm event is greater than 275 gallons per capita per day or when hydraulic overloading of the treatment plant occurs.

If the EPA screening criteria for I/I is not exceeded, the presumption is that the raw sewage influent would be at least 200 mg/L if the septic tanks were not present. These screening criteria apply regardless of whether the I/I can be cost effectively removed. Therefore, complying with the 30 mg/L effluent BOD₅ concentration limit means that the 85 percent removal requirement is also achieved.

FACT SHEET FOR NPDES PERMIT WA0037141

FACILITY NAME LAKE MAYFIELD VILLAGE

If the EPA screening criteria are exceeded, the facility will be required to implement a rehabilitation program to reduce I/i. The program will be agreed upon between the Department and the facility, and the details (schedules, work plan, financial commitment) will be incorporated into an administrative order.

The permit will require:

Monitoring and reporting of the influent BOD₅ and the percent BOD₅ removal accomplished at the WWTP.

Annual reporting of the highest 7-14 day average daily dry weather flow rate and the highest 24-hour per capita daily flow rate.

Institute and continue an adequate operation and maintenance program for the entire sewerage system including the septic tanks in the STEP system.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin-wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the state of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The state was issued 91 numeric water quality criteria for the protection of human health by the U.S. Environmental Protection Agency (EPA) (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the state of Washington.

ANTIDEGRADATION

The state of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a

FACT SHEET FOR NPDES PERMIT WA0037141
FACILITY NAME LAKE MAYFIELD VILLAGE

receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. More information on the state Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to the Cowlitz River, which is designated as a Class A receiving water in the vicinity of the outfall. Other nearby point source outfalls including the City of Mossyrock's wastewater outfall into Lake Mayfield. Characteristic uses include the following: water supply (domestic, industrial, agricultural); stock watering; fish migration; fish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Fecal Coliforms	100 organisms/100 mL maximum geometric mean
Dissolved Oxygen	8 mg/L minimum
Temperature	18 degrees Celsius maximum or incremental increases above background
pH	6.5 to 8.5 standard units
Turbidity	less than 5 NTUs above background

FACT SHEET FOR NPDES PERMIT WA0037141
FACILITY NAME LAKE MAYFIELD VILLAGE

Toxics No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

Pollutant concentrations in the proposed discharge exceed water quality criteria with technology-based controls, which the Department has determined to be AKART. A mixing zone is authorized in accordance with the geometric configuration, flow restriction, and other restrictions for mixing zones in Chapter 173-201A WAC and are defined as follows:

The current flow at the diffusers is along the downstream surface of the Plunge Pool Barrier Dam. As a result the plume goes along the dam as well. The method of reflection was used, with half the plume reflected into the wall of the dam. The concentrations were doubled to compensate for the modeling result to reflect the fact that the plume is like a bank discharge and it's spread is somewhat confined.

Acute Mixing Zone

The length of the Acute Mixing Zone is the direction of current flow along the Plunge Pool Barrier Dam. The current flows in a counter-clockwise fashion in the tail-water just downstream of the Plunge Pool Barrier Dam (Barrier Dam) due to the influence of the Tacoma City Light Powerhouse discharge. From the 3 port vertical outfall diffuser the Acute Mixing Zone extends 10 feet South along the Barrier Dam to 30 feet North of the diffuser in a Northerly direction along the Barrier Dam. The width is 25 percent of the River width at that point or 50 feet measured in a downstream direction from the Barrier Dam.

Chronic Mixing Zone

The Chronic Mixing Zone extends 148 feet Northward from the diffuser along the Barrier Dam and 10 feet South of the diffuser along the Dam. The width is 50 feet in a downstream direction from the Barrier Dam.

The dilution factors of effluent to receiving water that occur within these zones have been determined at the critical condition by the use of the UM Dilution Model for Acute Dilution Factor and the Fischer Equation for the Chronic Dilution Factor. The calculations are found in the Facility Plan for the new wastewater project

	Acute	Chronic
Aquatic Life	17.6	132
Human Health, Carcinogen		132
Human Health, Non-carcinogen		132

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

FACT SHEET FOR NPDES PERMIT WA0037141
FACILITY NAME LAKE MAYFIELD VILLAGE

The derivation of water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

The critical condition for the Cowlitz River is the seven-day average low river flow with a recurrence interval of ten years (7Q10). Ambient data at critical conditions in the vicinity of the 001 outfall was taken from the TMDL study which considered both historical data and an intensive monitoring study conducted in September-October 1990. The ambient background data used for this permit includes the following from (insert source):

Parameter	Value used
7Q10 low flow	2000 cfs
Velocity	0.214 ft/sec
Depth	9 feet
Width	203.2 feet
Temperature	15.1° C
pH (high)	8.0
Dissolved Oxygen	10.7 mg/L
Total Ammonia-N	0.05 mg/L
Fecal Coliform	12/100 mL dry weather (>100/100 mL storm related)
Conductivity	55 umhos
Turbidity	0.01 NTU
Hardness	20 mg/L as CaCO ₃ (10th percentile worse case)
Copper	Assumed zero ug/L (total recoverable estimated value)

BOD₅--Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, the technology-based effluent limitation for BOD₅ was placed in the permit.

BOD₅--This discharge with technology-based limitations results in a small amount of BOD loading relative to the large amount of dilution occurring in the receiving water at critical conditions. Technology-based limitations will be protective of dissolved oxygen criteria in the receiving water.

Temperature--The impact of the discharge on the temperature of the receiving water was modeled by simple mixing analysis at critical condition. The receiving water temperature at the critical condition is 15.1°C and the effluent temperature is 18°C. The predicted resultant temperature at the boundary of the chronic mixing zone is 15.1°C and the incremental rise is 0°C.

Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, no effluent limitation for temperature was placed in the proposed permit.

Temperature and pH

FACT SHEET FOR NPDES PERMIT WA0037141
FACILITY NAME LAKE MAYFIELD VILLAGE

Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, the technology-based effluent limitations for pH was placed in the permit and temperature was not limited.

Fecal coliform--The numbers of fecal coliform were modeled by simple mixing analysis using the technology-based limit of 400 organisms per 100 ml and a dilution factor of 132.

Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters with the technology-based limit. Therefore, the technology-based effluent limitation for fecal coliform bacteria was placed in the proposed permit.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The following toxics were determined to be present in the discharge: ammonia, and heavy metals. A reasonable potential analysis in the facility plan was conducted on these parameters to determine whether or not effluent limitations would be required in this permit.

The determination of the reasonable potential for ammonia and copper to exceed the water quality criteria was evaluated by the consultant in the facility plan. The critical condition in this case occurs during the low water time in the summer. The parameters used in the critical condition modeling are as follows: acute dilution factor 17.6, chronic dilution factor 132, receiving water temperature 15.1°C, receiving water alkalinity 20(as mg CaCO₃/L), and 0.05 mg/L ammonia.

No valid ambient background data was available for copper. A determination of reasonable potential using zero for background resulted in no reasonable potential and a copper effluent limit.

Water quality criteria for metals in Chapter 173-201A WAC are based on the dissolved fraction of the metal.

The Permittee may provide data clearly demonstrating the seasonal partitioning of the dissolved metal in the ambient water in relation to an effluent discharge. Metals criteria may be adjusted on a site-specific basis when data is available clearly demonstrating the seasonal partitioning in the ambient water in relation to an effluent discharge.

Metals criteria may also be adjusted using the water effects ratio approach established by USEPA, as generally guided by the procedures in USEPA Water Quality Standards Handbook, December 1983, as supplemented or replaced.

The resultant effluent limits are as follows:

Effluent Limits		
Parameter	Monthly Average	Average Weekly
BOD ₅	30 mg/L, 20 lbs/day	45 mg/L, 35 lbs/day
TSS	30 mg/L, 20 lbs/day	45 mg/L, 35 lbs/day
Fecal Coliform	200/100 ml	400/100 ml

FACT SHEET FOR NPDES PERMIT WA0037141
FACILITY NAME LAKE MAYFIELD VILLAGE

Total Ammonia (as NH ₃ -N)	Minimize	Minimize
---------------------------------------	----------	----------

Water quality criteria for metals in Chapter 173-201A WAC are based on the dissolved fraction of the metal.

The Permittee may provide data clearly demonstrating the seasonal partitioning of the dissolved metal in the ambient water in relation to an effluent discharge. Metals criteria may be adjusted on a site-specific basis when data is available clearly demonstrating the seasonal partitioning in the ambient water in relation to an effluent discharge.

Metals criteria may also be adjusted using the water effects ratio approach established by USEPA, as generally guided by the procedures in USEPA Water Quality Standards Handbook, December 1983, as supplemented or replaced.

WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore, this approach is called whole effluent toxicity (WET) testing.

Toxicity caused by unidentified pollutants is not expected in the effluent from this discharge as determined by the screening criteria given in Chapter 173-205 WAC. Therefore, no whole effluent toxicity testing is required in this permit. The Department may require effluent toxicity testing in the future if it receives information that toxicity may be present in this effluent.

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the applicant's discharge is unlikely to contain chemicals regulated for human health.

A determination of the discharge's potential to cause an exceedance of the water quality standards was conducted as required by 40 CFR 122.44(d). The reasonable potential determination was evaluated with procedures given in the Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) and the Department's Permit Writer's Manual (Ecology Publication 92-109, July, 1994). The determination indicated that the discharge has no reasonable potential to cause a violation of water quality standards beyond the ammonia and copper water quality limits. No additional effluent limits are warranted.

Sediment Quality

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

Monitoring of sludge quantity and quality is necessary to determine the appropriate uses of the sludge. Sludge monitoring is required by the current state and local Solid Waste Management Program and also by EPA under 40 CFR 503.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. The required monitoring frequency is consistent with agency guidance given in the current version of Ecology's *Permit Writer's Manual* (July 1994) for a 0.8 MGD Sequencing Batch Reactor activated sludge system.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. The laboratory at this facility is not accredited yet as this is a new facility replacing existing failing septic systems.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The Conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

PREVENTION OF FACILITY OVERLOADING

Overloading of the treatment plant is a violation of the terms and conditions of the permit. To prevent this from occurring, Revised Code of Washington (RCW) 90.48.110 and WAC 173-220-150 require the Permittee to take the actions detailed in proposed permit requirement S.4 to plan expansions or modifications before existing capacity is reached and to report and correct conditions that could result in new or increased discharges of pollutants. Condition S.4 restricts the amount of flow.

OPERATION AND MAINTENANCE (O&M)

The proposed permit contains Condition S.5 as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

RESIDUAL SOLIDS HANDLING

To prevent water quality problems the Permittee is required in permit Condition S7 to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and State Water Quality Standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503. The disposal of other solid waste is under the jurisdiction of the Lewis County Health Department.

PRETREATMENT

No industrial users will be hooked up to the system. The system is primarily residential.

OUTFALL EVALUATION

Proposed permit Condition S8 requires the Permittee to conduct an outfall inspection and submit a report detailing the findings of that inspection. The purpose of the inspection is to determine the condition of the discharge pipe and diffusers and to determine if sediment is accumulating in the vicinity of the outfall.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual municipal NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards, Sediment Quality Standards, or Ground Water Standards, based on new information

FACT SHEET FOR NPDES PERMIT WA0037141

FACILITY NAME LAKE MAYFIELD VILLAGE

obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to protect human health, aquatic life, and the beneficial uses of waters of the state of Washington. The Department proposes that this permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.
1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.
1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.
1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.
1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Metcalf and Eddy.

1991. Wastewater Engineering, Treatment, Disposal, and Reuse. Third Edition.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

Water Pollution Control Federation.

1976. Chlorination of Wastewater.

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(EE2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to issue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations, which are described in the rest of this fact sheet.

Public notice of application was published on February 23, 2001, August 22, 2001, and August 29, 2001 in the *Centralia-Chehalis Daily Chronicle* to inform the public that an application had been submitted and to invite comment on the issuance of this permit.

The Department published a Public Notice of Draft (PNOD) on November 21, 2001, in the *Morton Journal* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Southwest Regional Office
P. O. Box 47775
Olympia, WA 98504-7775.

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the 30-day comment period to the address above. The request for a hearing shall indicate the interest of the party and the reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least 30 days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within 30 days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6279, or by writing to the address listed above.

This permit and fact sheet were written by Al Bolinger, P.E., SWRO.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a pollutant on an organism that occurs within a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of prevention, control, and treatment."

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month (except in the case of fecal coliform). The daily discharge is calculated as the average measurement of the pollutant over the day.

Average Weekly Discharge Limitation -- The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. The daily discharge is calculated as the average measurement of the pollutant over the day.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

CBOD₅ -- The quantity of oxygen utilized by a mixed population of microorganisms acting on the nutrients in the sample in an aerobic oxidation for five days at a controlled temperature of 20 degrees Celcius, with an inhibitory agent added to prevent the oxidation of nitrogen compounds. The method for determining CBOD₅ is given in 40 CFR Part 136.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a pollutant on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Combined Sewer Overflow (CSO)--The event during which excess combined sewage flow caused by inflow is discharged from a combined sewer, rather than conveyed to the sewage treatment plant because either the capacity of the treatment plant or the combined sewer is exceeded.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of four discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots).

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring --Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial User-- A discharger of wastewater to the sanitary sewer which is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Infiltration and Inflow (I/I)--"Infiltration" means the addition of ground water into a sewer through joints, the sewer pipe material, cracks, and other defects. "Inflow" means the addition of precipitation-caused drainage from roof drains, yard drains, basement drains, street catch basins, etc., into a sewer.

Interference -- A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal and;

Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--A volume that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in State regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

Pass through -- A discharge which exits the POTW into waters of the--State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Potential Significant Industrial User--A potential significant industrial user is defined as an Industrial User which does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

- a. Exceeds 0.5 % of treatment plant design capacity criteria and discharges <25,000 gallons per day or;
- b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).

The Department may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Significant Industrial User (SIU)--

- 1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N and;
- 2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, wetlands, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids are the particulate materials in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration or mass of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C--TECHNICAL CALCULATIONS

Several of the Excel[®] spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at <http://www.ecy.wa.gov>.

APPENDIX D--RESPONSE TO COMMENTS

The following comments were submitted by Allan Maas, Lewis County Water and Sewer District No. 6:

Permit Comments:

Page 5, Effluent Limits:

Comment 1: BOD & TSS limits. Footnote “b” needs to state that the STEP tanks provide primary treatment for the wastewater. The 85 percent removal criteria does not apply to this WWTP’s influent wastewater. Refer to the City of Yelm or Peshastin’s NPDES permits.

Response: Changes were made.

Comment 2: Ammonia limit: Based on the reasonable potential calculation procedure outlined in the Ecology permit writers manual and effluent data from existing SBR WWTPs, there is no reasonable potential to exceed the ammonia limits of 68 mg/L and 99 mg/L. Refer to the attached reasonable potential calculations. The District, therefore, asks that these limits be removed from the permit.

Response: Ammonia limit was dropped but will require to minimize.

Comment 3: Copper limit: Based on new wastewater copper concentration sampling techniques, a reasonable potential calculation shows that the WWTP has no reasonable potential of exceeding the water quality standard for copper. Refer to the attached reasonable potential calculations. The effluent copper concentration from similar WWTPs is consistently 20 ug/L or less. The District asks that if the copper limit is included in the permit, it be a temporary limit that can be removed once the testing data proves there is no reasonable potential. Obtaining accurate copper data will be costly, and therefore, the District should not be forced to perform this test every month if the data indicates there is no reasonable potential.

Response: Copper limit was dropped.

Page 6, Table A-Monitoring Schedule:

Comment 4: Flow measurement. There is an asterisk next to “Continuous,” but no corresponding table footnote.

Response: Footnote added.

Comment 5: Effluent BOD and TSS. The “units” column should probably include lbs/day for these parameters.

Response: Has already been addressed and changed.

Comment 6: Ammonia Testing: Because there is no reasonable potential for the ammonia limit to be exceeded, the District asks that the ammonia testing be reduced to 1/month.

Response: Ammonia testing has been reduced.

FACT SHEET FOR NPDES PERMIT WA0037141

FACILITY NAME LAKE MAYFIELD VILLAGE

Comment 7: Copper Testing: Because of the cost of the copper testing, the District asks that once they have six months of effluent copper data to verify there is no reasonable potential to exceed water quality standards, this testing frequency be changed to semi-annual testing. The sampling method should be grab sampling (not composite) to avoid ambient contamination of the sample. The units listed in the table should be ug/L (not mg/L).

Response: Copper limits and testing has been dropped.

Page 9, Facility Loading:

Comment 8: For information only, no change required. The plant influent peak hour design flow is 0.24 mgd and the effluent peak flow is 0.35 mgd.

Response: So noted.

Comment 9: BOD load: The plant design BOD load is 127 lbs/day (not 120 lbs/day). Refer to the WWTP design drawings.

Response: Change has been made.

Comment 10: The Design population equivalent number 725 should be removed from the WWTP design criteria. WWTP design is based on load and flow, not population. The plant capacity should not be set based on an estimated population equivalent.

Response: The Design population equivalent has been dropped.

Page 11, Operation and Maintenance:

Comment 11: The District would like to use an “operator in training” to be the backup operator in the event the normal operator is not available. Please make this revision to Section A. *Operator Certification*.

Response: State law requires that a certified operator shall be in reasonable charge.

Fact Sheet Comments:

Page 2, Collection System Status:

Comment 12: The STEP collection system was completed in September 2001 (not 2002). The WWTP should be placed in operation in January 2002. The STEP tank installation will be ongoing.

Response: Changes were made.

Page 3, Wastewater Characterization:

Comment 13: Hopefully there will not be any confusion about anticipated average effluent BOD and TSS and the actual permit limits.

Response: Changes were made.

FACT SHEET FOR NPDES PERMIT WA0037141

FACILITY NAME LAKE MAYFIELD VILLAGE

Page 4, Design Criteria:

Comment 14: The plant design BOD load is 127 lbs/day, not 120 lbs/day.

Response: Change was made.

Page 8, Parameters:

Comment 15: The 90th percentile river pH value should be 8.0 (not 8.1).

Response: Change was made.

Page 9:

Comment 16: The 90th percentile river temperature value should be 15.1 (not 15.3). Change this in 3 places.

Response: Changes were made.

Page 10, Effluent Limits:

Comment: See comments 2, 3, 6, and 7 above regarding ammonia and copper limits.

Response: Changes were made.